

ABSTRACT OF THE DISCLOSURE

A protein having a labeling compound attached to its C-terminal, in which the compound comprises a label portion comprising a label substance and an acceptor portion comprising a compound having an ability of binding to a C-terminal of a synthesized protein when protein synthesis is carried out in a cell-free protein synthesis system or in a living cell is provided. Also, a method for producing the protein comprising the step of performing synthesis of a protein in a cell-free protein synthesis system or in a living cell in the presence of a labeling compound comprising a label portion comprising a label substance and an acceptor portion comprising a compound having an ability of binding to a C-terminal of a synthesized protein when protein synthesis is carried out in the cell-free protein synthesis system or in the living cell, the labeling compound being present at a concentration effective for the labeling compound to bind to the C-terminal of the synthesized protein is provided. Also, the labeling compound and a method for analyzing a function of a gene are further provided.